

**BC Science 10****Practice Exam A**

**Instructions:** For each question, select the **best** answer and record your choice.

Refer to the BC Science 10 data pages as necessary.

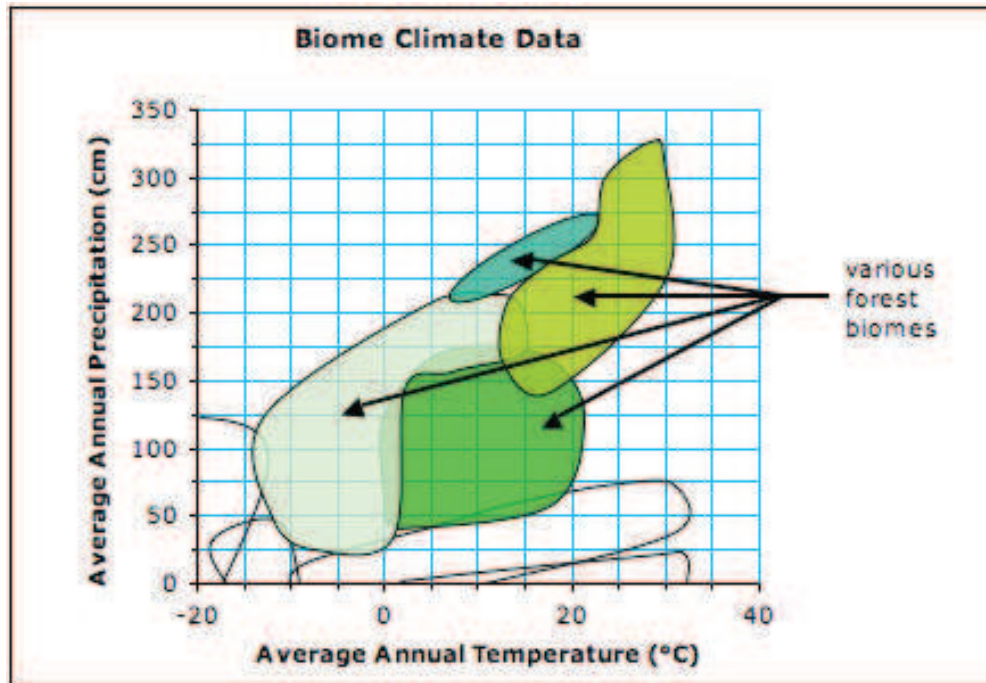
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1. Walking home from school on a windy day, Jay observed several abiotic components in his environment. Which of the following are abiotic factors he might have seen?

I	wind
II	fungi
III	gravel pathway
IV	worms

- A. III only  
B. I and III only  
C. II and IV only  
D. I, II, and III only
2. Which of the following biomes is not found in Canada?
- A. desert  
B. boreal forest  
C. tropical rainforest  
D. temperate rainforest
3. Which of the following species is most likely to occupy the fourth trophic level in an ecosystem?
- Sun → grass → grasshopper → mouse → snake → hawk
- A. snake  
B. hawk  
C. mouse  
D. grasshopper

Use the climate graph below to answer the following question.



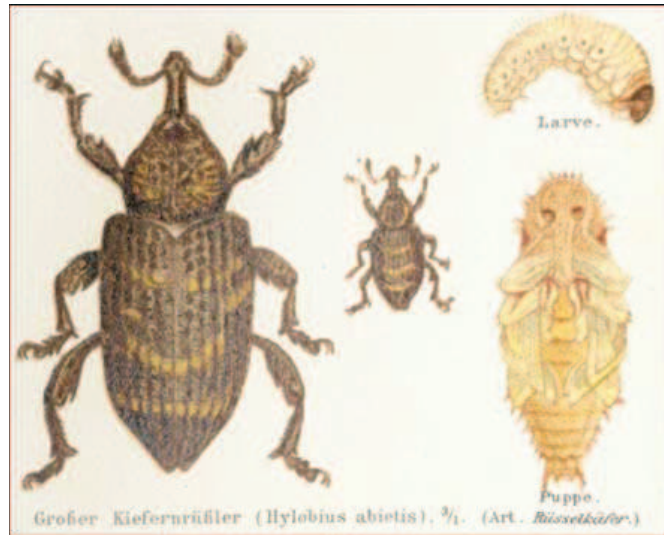
4. What average annual temperature occurs in all four forest biomes?
- A. 5°C
  - B. 10°C
  - C. 13°C
  - D. 20°C

Rachel Carson took four years to write *Silent Spring*. Her book described in detail how the pesticide DDT entered the food chain and built up in the fatty tissues of animals, including human beings, and caused cancer and genetic damage. She wrote that a single application on a crop killed insects for weeks and months. It killed not only the targeted insects but countless more, and remained toxic in the environment even after it was diluted by rainwater. Carson concluded that DDT and other pesticides had irrevocably harmed birds and animals and had contaminated the entire world food supply.

*Adapted from <http://www.nrdc.org/health/pesticides/hcarson.asp>*

5. Which process does this article provide a good example of?
- A. ecological succession
  - B. bioaccumulation
  - C. bioremediation
  - D. eutrophication

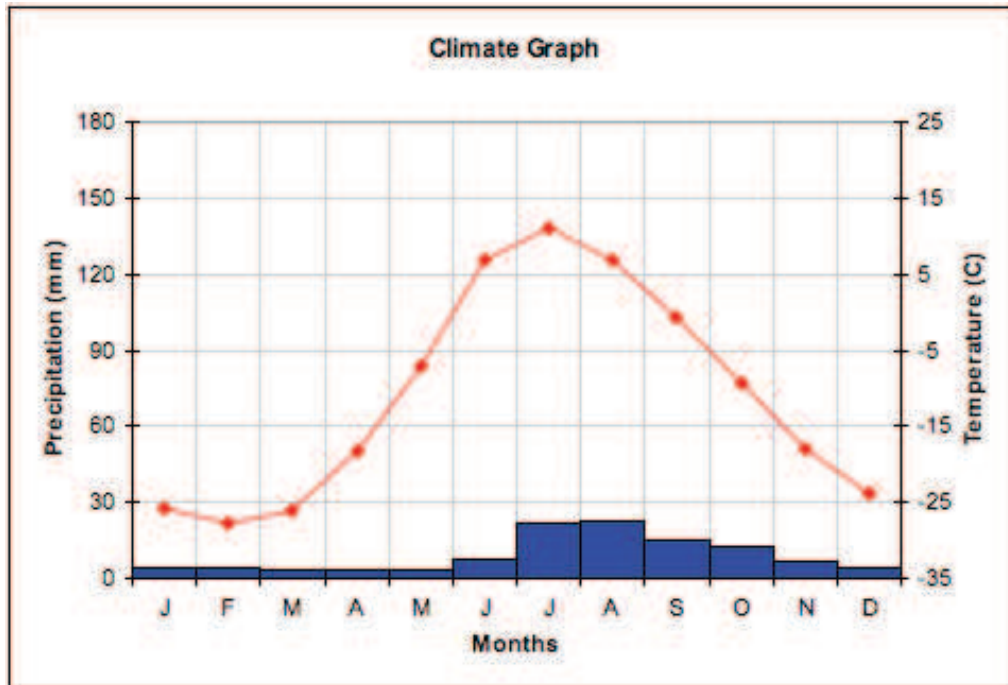
The white pine weevil shown below attacks spruce trees, particularly Sitka spruce. This insect attacks trees by boring into the previous year's new growth at the top of the tree. This new growth is called the leader. The weevil deposits eggs inside the leader. The larvae emerge and feed down the leader, thus killing the current leader of the tree, resulting in dead, deformed, or multiple leaders. This insect has greatly reduced foresters' ability to plant Sitka spruce in areas such as Vancouver Island.



[http://commons.wikimedia.org/wiki/Image:Hylebius\\_abietis\\_meyers\\_1888\\_v16\\_p352.jpg](http://commons.wikimedia.org/wiki/Image:Hylebius_abietis_meyers_1888_v16_p352.jpg)

6. What is the best description of the relationship between the white pine weevil and Sitka spruce?
  - A. parasitism
  - B. mutualism
  - C. competition
  - D. commensalism
  
7. Which of the following describes how phosphorus is released as a result of a biotic factor interacting with an abiotic one?
  - A. Geologic uplift exposes rocks to the atmosphere.
  - B. An eagle gets phosphorus from eating other consumers.
  - C. Phosphates in run-off settle to the bottoms of lakes and oceans.
  - D. Lichen cause phosphates to be released from rocks through chemical weathering.

8. Identify the biome shown in the climatograph below.

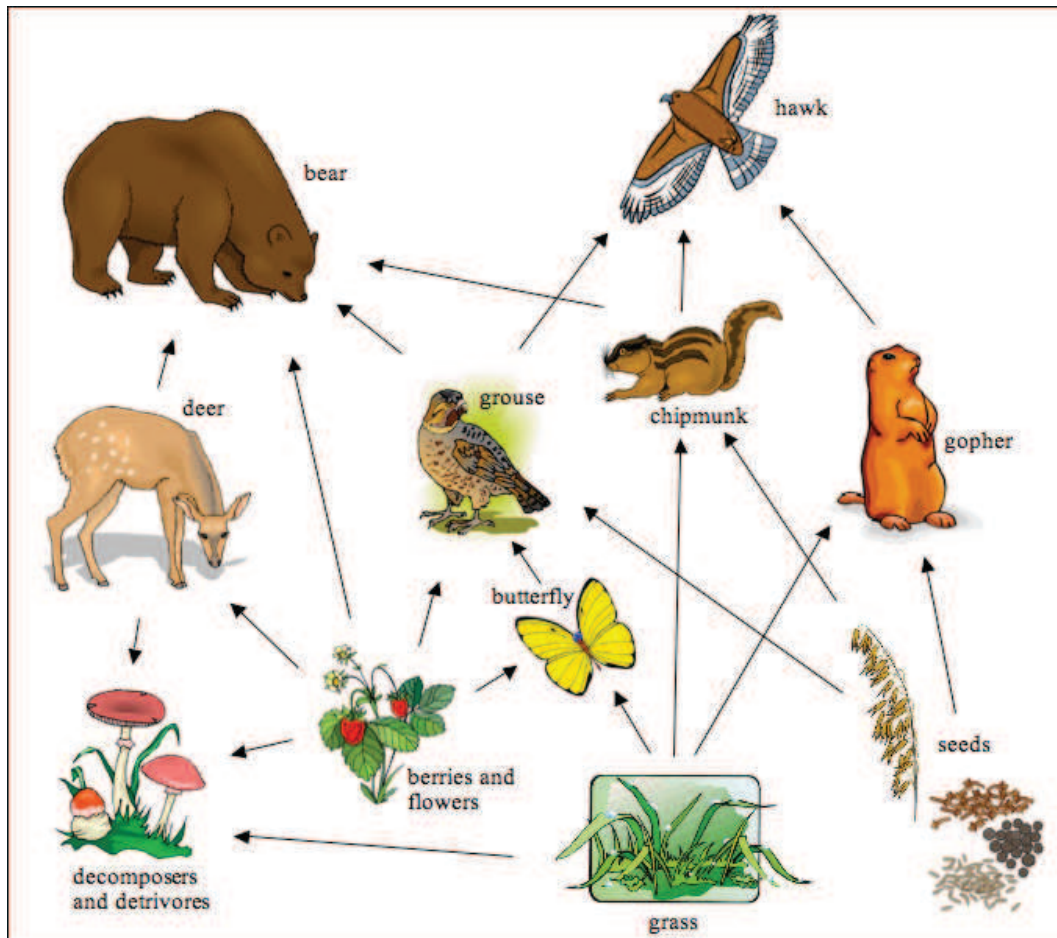


- A. desert
  - B. tundra
  - C. grasslands
  - D. permanent ice
- 

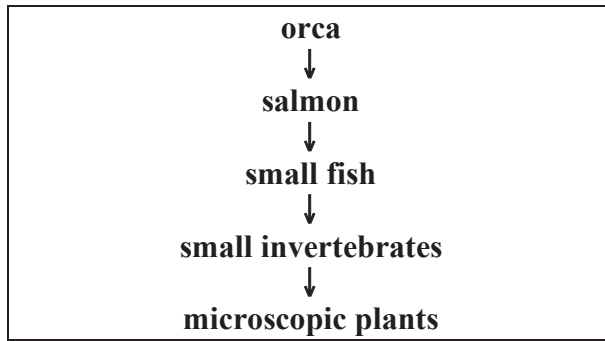
9. What role do nitrifying bacteria play in the nitrogen cycle?

- A. They convert ammonium into nitrates which are taken up by plants.
- B. They take the DNA of dead organisms and convert it into nitrogen gas.
- C. They convert nitrates into nitrogen gas that is then released into the atmosphere.
- D. Once the lightening fixes the nitrogen, these bacteria convert it into nitrates that are taken up by plants.

Use the following food web to answer this question.



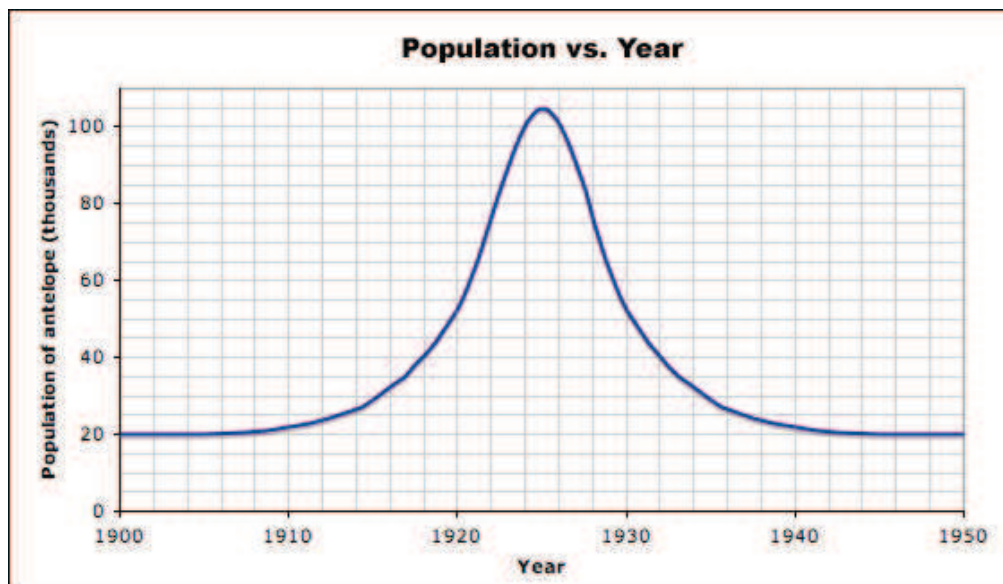
10. If deer were removed from this web, what would most likely happen?
- A. The grizzly bear population would increase.
  - B. The chipmunk population would increase.
  - C. The butterfly population would decrease.
  - D. The grouse population would decrease.



11. Which species would mostly likely be eradicated as a result of bioaccumulation?

- A. orca
- B. salmon
- C. small fish
- D. algae

Use the following graph of an antelope population over time to answer this question.



12. Which of the following is the most likely explanation for the change in the number of antelope from 1910 to 1925?

- A. Climate change brought about drought conditions.
- B. There was a decrease in the number of the predatory lions in the area.
- C. An active volcano nearby had erupted violently, pouring out lava into the area.
- D. Large numbers of fires had broken out in the area, burning much of the grasslands.

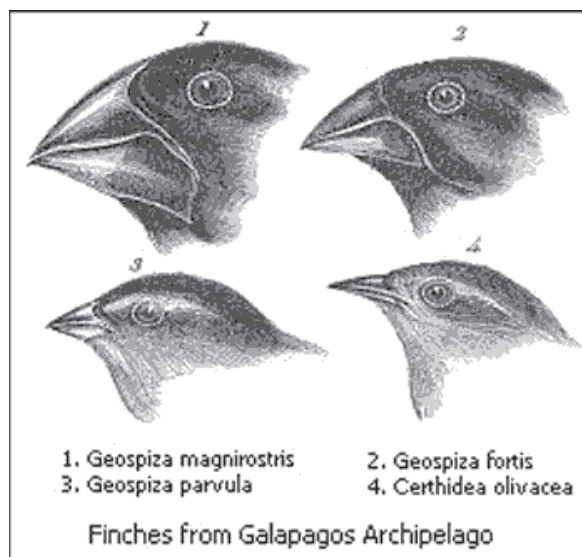
13. Which processes contribute to the cycling of carbon through ecosystems?



I	volcanic eruptions
II	bioaccumulation
III	decomposition
IV	photosynthesis
V	forest fires

- A. I, II, III, IV and V
- B. I, III, IV, and V only
- C. II, III, and V only
- D. II, IV, and V only

Use this illustration to help answer the question below.



[http://en.wikipedia.org/wiki/Image:Darwin%27s\\_finches.jpeg](http://en.wikipedia.org/wiki/Image:Darwin%27s_finches.jpeg)

14. What process allows for variation found amongst the finches of the Galapagos Islands?
- A. ecological succession
  - B. adaptive radiation
  - C. natural selection
  - D. continental drift

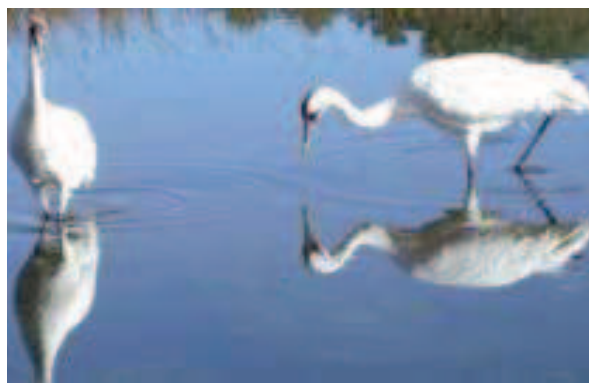
The effect of rabbits on the ecology of Australia has been devastating. Rabbits were first introduced to Australia for hunting purposes by the early Europeans in the 18th century. Since then, the rabbits have been responsible for the destruction of habitats, the consequent extinction of many native animals, and millions of dollars of damage to crops.

15. How would the rabbits of Australia be classified?

- A. a native species
- B. a foreign species
- C. a pioneer species
- D. an invasive species

“The Whooping Crane [shown below] is a flagship species in the North American wildlife conservation movement and symbolizes the struggle for survival that characterizes many endangered species worldwide. It is a large, distinctive, and photogenic bird, popular with the public and the media, and is often used to illustrate endangered species literature. Once numbering in the several thousands, the Whooping Crane approached the brink of extinction in the 1940s, when only 21 Whooping Cranes remained in the world. Luckily, these large majestic birds were saved from extinction, and by March 2007, the Canadian migratory Whooping Crane population grew to 237 birds. While on the precarious road to recovery, Whooping Cranes remain listed as an endangered species in Canada and the United States.”

Source: [http://www.sararegistry.gc.ca/sar/recovery/background\\_e.cfm](http://www.sararegistry.gc.ca/sar/recovery/background_e.cfm)



16. The whooping crane is listed on Canada’s endangered species list. This means that they are at risk of which of the following?

- A. becoming extinct
- B. being overexploited
- C. being in danger in their ecosystem
- D. being a dangerous threat to other organisms in their environment



17. What term best describes the process that takes place in an ecosystem after a forest fire has burned through?
- A. habitat alteration
  - B. primary succession
  - C. habitat fragmentation
  - D. secondary succession
18. Which biomes have the least annual precipitation?
- A. desert and tundra
  - B. permanent ice and desert
  - C. tundra and permanent ice
  - D. temperate grassland and desert
19. Heavy metals can bioaccumulate within organisms and biomagnify, moving up the food chain. Which of the following are the three most polluting heavy metals?
- A. lead, copper, and zinc
  - B. copper, lead, and mercury
  - C. selenium, copper, and zinc
  - D. lead, mercury, and cadmium

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In the past, many European whalers relied on Inuit knowledge to direct them to new Arctic whaling grounds and to learn how to harpoon whales more efficiently. Unfortunately, they exploited the indigenous peoples, their knowledge, and their resources. For most indigenous peoples, contact with Europeans resulted in the loss of lands, resources, languages, cultures, and lives. Colonization has had an overall negative impact on the life of indigenous peoples as well as the environment.

*Adapted from <http://www.idrc.ca/openbooks/683-6/>*

20. Which of the following statements accurately reflects the information presented above?
- A. Colonization of the Inuit lands led to reduced numbers of whales.
  - B. Europeans whalers used only their own skills to be successful whale hunters.
  - C. Europeans used Inuit traditional ecological knowledge to locate whales and improve their hunting practices.
  - D. All the indigenous peoples lost everything to the Europeans as a result of colonization.

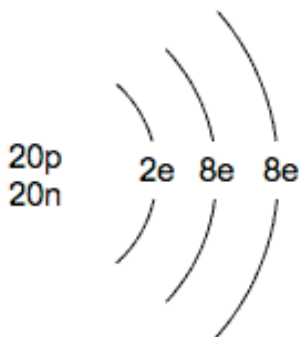
21. Which of the following describes a phosphide ion, which is an ion of the element phosphorus?

- A. 15 protons, 16 neutrons, and 15 electrons
- B. 15 protons, 16 neutrons, and 18 electrons
- C. 15 protons, 16 neutrons, and 12 electrons
- D. 15 protons, 18 neutrons, and 16 electrons

22. Which of the following is a covalent compound?

- A.  $S_8$
- B.  $HgO$
- C.  $SnS_2$
- D.  $Al_2O_3$

23. Which of the following is represented by the diagram below?



- A. argon ion
- B. argon atom
- C. calcium ion
- D. calcium atom

24. How many valence electrons do elements in group 16 have?

- A. 2
- B. 6
- C. 8
- D. 16

25. Which of the following is the formula for the compound manganese(IV) sulphate?

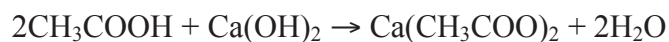
- A.  $\text{Mg}(\text{SO}_4)_2$
- B.  $\text{Mg}_4(\text{SO}_4)_2$
- C.  $\text{Mn}(\text{SO}_4)_2$
- D.  $\text{Mn}_2(\text{SO}_4)_4$

26. Name the following compound:  $\text{OF}_2$

- A. oxide difluorine
- B. oxygen difluoride
- C. monoxide difluoride
- D. monoxxygen diflouride

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**Use the following chemical reaction to answer the next question.**



27. Which of the following statements are true?

I	$\text{CH}_3\text{COOH}$ is a base
II	$\text{Ca}(\text{CH}_3\text{COO})_2$ is a salt
III	$\text{CH}_3\text{COOH}$ is an acid
IV	The products of the above reaction are salt and water

- A. I only
- B. I and IV
- C. III and IV
- D. II, III, and IV

Use the data pages to answer the following question.

An unknown substance provides the following results:

Bromothymol Blue	Phenolphthalein	Methyl Orange
blue	pink	yellow

28. What is the likely pH of the substance?
- A. 3
  - B. 5
  - C. 7
  - D. 11
29. What is the name of the compound  $\text{H}_3\text{PO}_4$ ?
- A. phosphoric acid
  - B. phosphorous acid
  - C. hydrogen phosphoric acid
  - D. hydrogen phosphorous oxide
30. What properties do acids and bases have in common?

I	Many of them can burn your skin
II	They form ions when dissolved in solution
III	They corrode metals
IV	They conduct electricity

- A. I, II, III, and IV
- B. I, II, and IV
- C. II and IV only
- D. II, III, and IV

31. Which of the following would most likely represent the reaction of a metal oxide with water?

I	$\text{Ca} + \text{O}_2 \rightarrow \text{CaO}$
II	$\text{BaO} + \text{H}_2\text{O} \rightarrow \text{Ba}(\text{OH})_2$
III	$\text{Fe}(\text{OH})_3 \rightarrow \text{Fe}_2\text{O}_3 + \text{H}_2\text{O}$
IV	$\text{K}_2\text{O}(\text{s}) + \text{H}_2\text{O}(\text{l}) \rightarrow 2\text{KOH}(\text{aq})$
V	$\text{SO}_2 + \text{H}_2\text{O} \rightarrow \text{H}_2\text{SO}_3$

- A. I, II, III, IV, and V  
 B. III only  
 C. II and IV  
 D. II, IV, and V
32. A beaker contains distilled water with bromothymol blue indicator added, making the water appear blue. A student places a straw in the beaker and blows bubbles into the water. As  $\text{CO}_2$  builds up in the water, the indicator colour changes from blue to green and then to yellow.

What do you predict happened?

I	The non-metal oxide dissolved in water producing an acid
II	This was a combustion reaction
III	The metal oxide dissolved in water producing a salt
IV	A synthesis reaction occurred and yielded $\text{H}_2\text{CO}_3$

- A. I only  
 B. I and IV  
 C. II and IV  
 D. III and IV

33. Which of the following metals is the least reactive?
- A. lead
  - B. cesium
  - C. lithium
  - D. magnesium
34. Which of the following is an organic compound?
- A.  $\text{SO}_2$
  - B.  $\text{CaC}_2$
  - C.  $\text{K}_2\text{CO}_3$
  - D.  $\text{C}_2\text{H}_5\text{Cl}$
35. What type of reaction occurs when your lab partner burns propane ( $\text{C}_3\text{H}_8$ ) in a Bunsen burner to conduct an experiment?
- A. synthesis
  - B. combustion
  - C. decomposition
  - D. double replacement
36. What is the coefficient needed in front of  $\text{H}_3\text{PO}_4$  in order to balance the following equation?



- A. 1
- B. 2
- C. 4
- D. 6



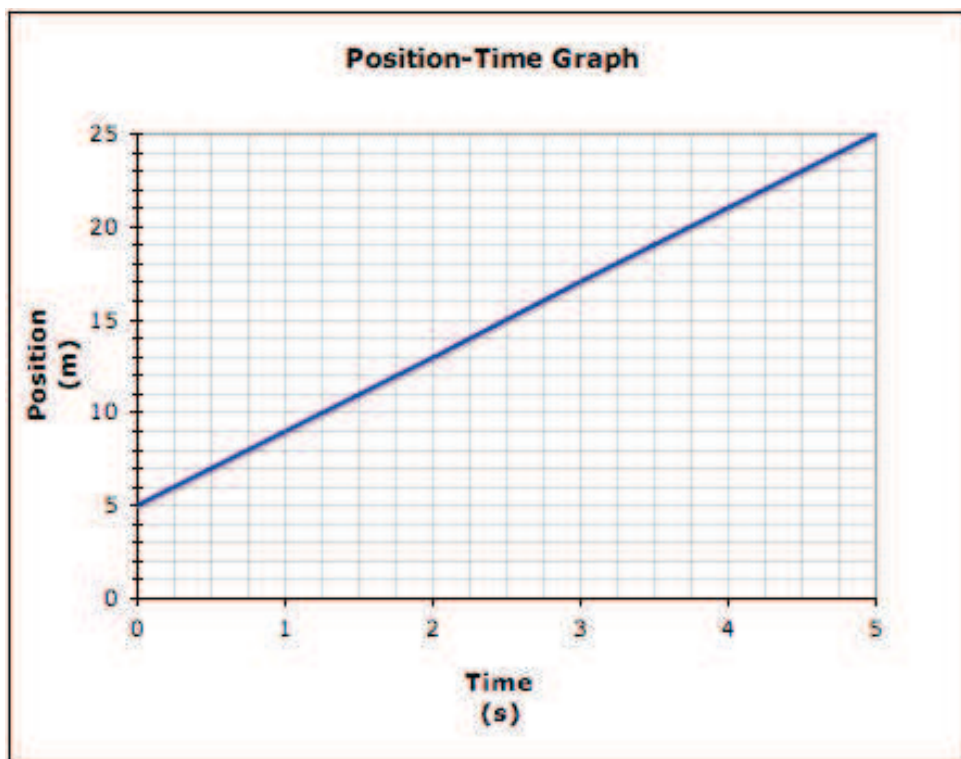
37. Octane ( $C_8H_{18}$ ) requires a lot of oxygen when it undergoes combustion. How many molecules of oxygen would it require?
- A. 13  
B. 18  
C. 25  
D. 50
38. Which principle supports the fact that it is not possible to start with 500 g of reactant in a closed container and end up with 525 g of product?
- A. rate of reaction  
B. kinetic molecular theory  
C. balanced chemical equation  
D. law of conservation of mass
39. Which of the following should you do to speed up the reaction rate of an experiment?
- |     |                                    |
|-----|------------------------------------|
| I   | use larger pieces of the reactants |
| II  | increase the temperature           |
| III | increase the concentration         |
| IV  | use a catalyst                     |
- A. I, II, and III  
B. I, II, III, and IV  
C. II only  
D. II, III, and IV
40. What would be the coefficient in front of the salt of the neutralization of chlorous acid and magnesium hydroxide?
- A. 0  
B. 1  
C. 2  
D. 4

41. An element is analyzed in the lab. It is found to have a mass number of 60 and 27 electrons orbiting the nucleus of each atom. What element could it be?
- A. cobalt-59
  - B. cobalt-60
  - C. aluminum-27
  - D. neodymium-60
42. In which radioactive decay process is there no particle emission, no change in the mass number, and no change in the atomic number?
- A. alpha decay
  - B. beta decay
  - C. gamma decay
  - D. nuclear fission
43. What product would be produced from the beta decay of potassium-40?
- A. calcium-40
  - B. krypton-36
  - C. potassium-39
  - D. potassium-40
44. How much of a 300 g sample of iodine-131 is left after 32 days if the half-life of I-131 is 8 days?
- A. 9.38 g
  - B. 18.75 g
  - C. 37.5 g
  - D. 1200 g
45. Which of the following reactions represents a nuclear fusion reaction?
- A.  ${}^{14}_6\text{C} \rightarrow {}^{14}_7\text{N} + {}^0_{-1}e$
  - B.  ${}^{235}_{92}\text{U} \rightarrow {}^{231}_{90}\text{Th} + {}^4_2\text{He}$
  - C.  ${}^{13}_6\text{C} + {}^4_2\text{He} \rightarrow {}^{16}_8\text{O} + {}^1_0n$
  - D.  ${}^{235}_{92}\text{U} + {}^1_0n \rightarrow {}^{145}_{57}\text{La} + {}^{88}_{35}\text{Br} + {}^1_0n$

46. Which of the following statements is correct?

I	Position, speed, and displacement are scalar quantities
II	Position, displacement and, velocity are vector quantities
III	Displacement, speed, and time interval are scalar quantities
IV	Distance and time intervals are vector quantities

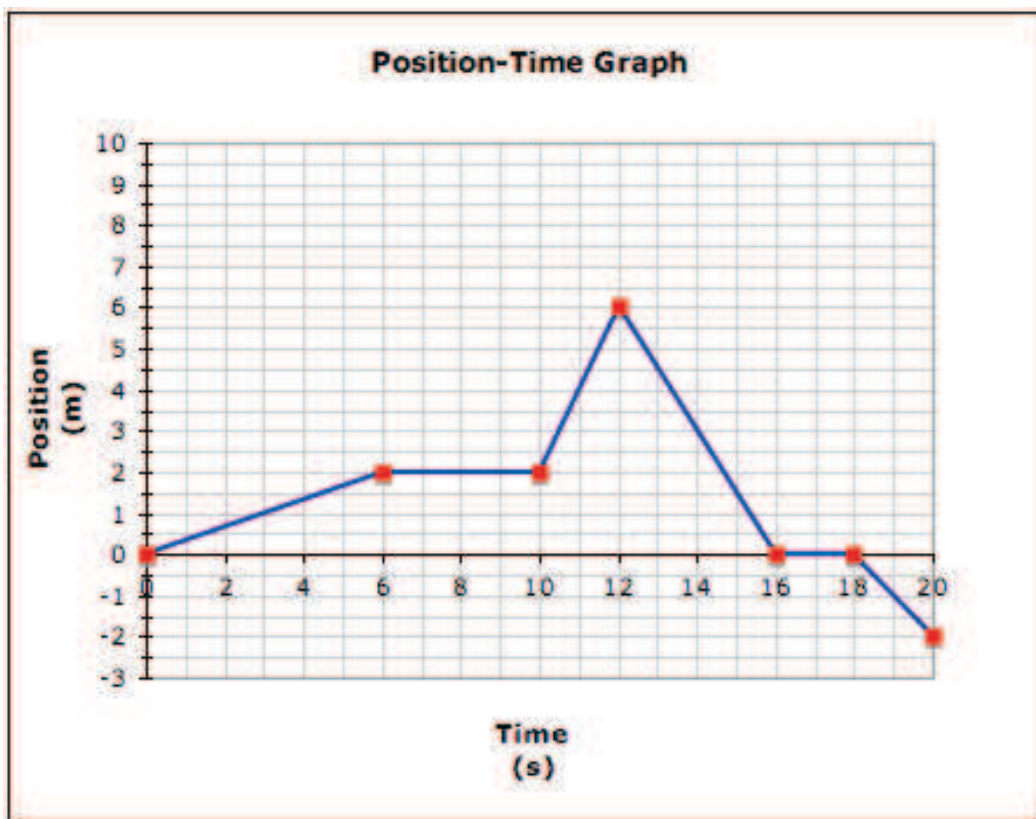
- A. I and IV
- B. II
- C. IV
- D. III



47. Using the graph above, determine the velocity of the moving object.

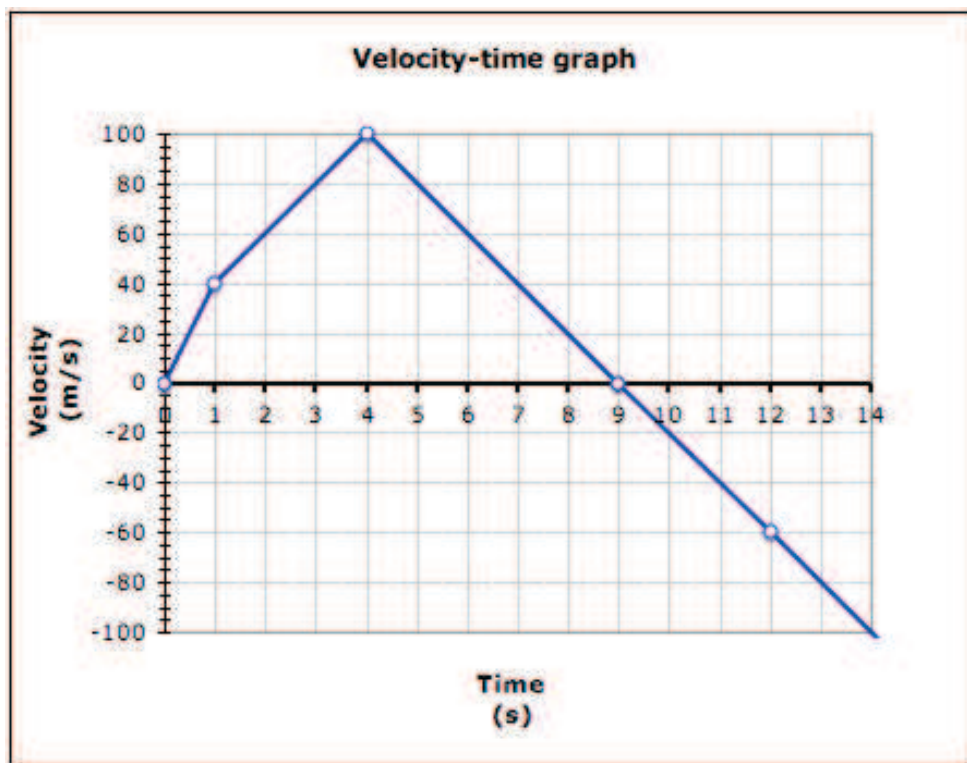
- A. +4 m/s
- B. +4 m/s<sup>2</sup>
- C. +5 m/s
- D. -5 m/s

Use the following graph of Jenny running through an obstacle course in the field to answer the next two questions.



48. What is happening between the 6 s and 10 s interval?
- A. Jenny has stopped moving.
  - B. Jenny is walking over a bridge.
  - C. Jenny is walking east in a straight line.
  - D. Jenny is moving away from the start of the course.
49. What is the total distance covered by Jenny in 20 s?
- A. -2 m
  - B. 14 m
  - C. 18 m
  - D. 20 m

Use the graph below to answer the following question.



50. What is the acceleration of this object from 1 s to 4 s?

- A.  $-20 \text{ m/s}^2$
  - B.  $+20 \text{ m/s}$
  - C.  $+20 \text{ m/s}^2$
  - D.  $+25 \text{ m/s}^2$
- 

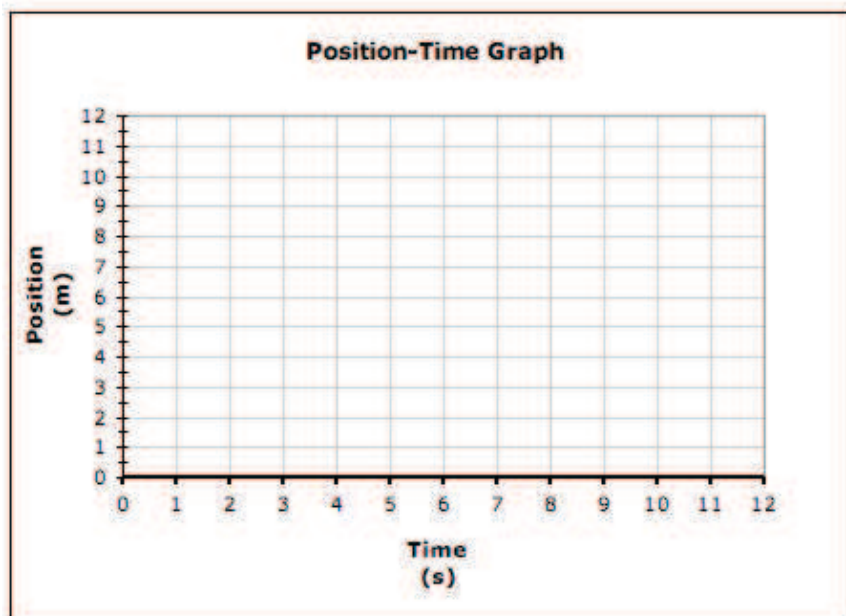
51. Your science teacher walks around the classroom. Starting at her desk, she walks 4 m east, 2 m south, 4 m west, and finally 2 m north back to her desk. What is her displacement?

- A.  $-12 \text{ m}$
- B.  $+12 \text{ m}$
- C.  $4 \text{ m}$
- D.  $0 \text{ m}$

Imagine you record your friend's position as he rollerblades east along the street. You may find it useful to graph the data in the table on the grid provided below.

**Position vs time**

Time (s)	Position (m)
0	0
2	1.5
4	3
6	4.5
8	6



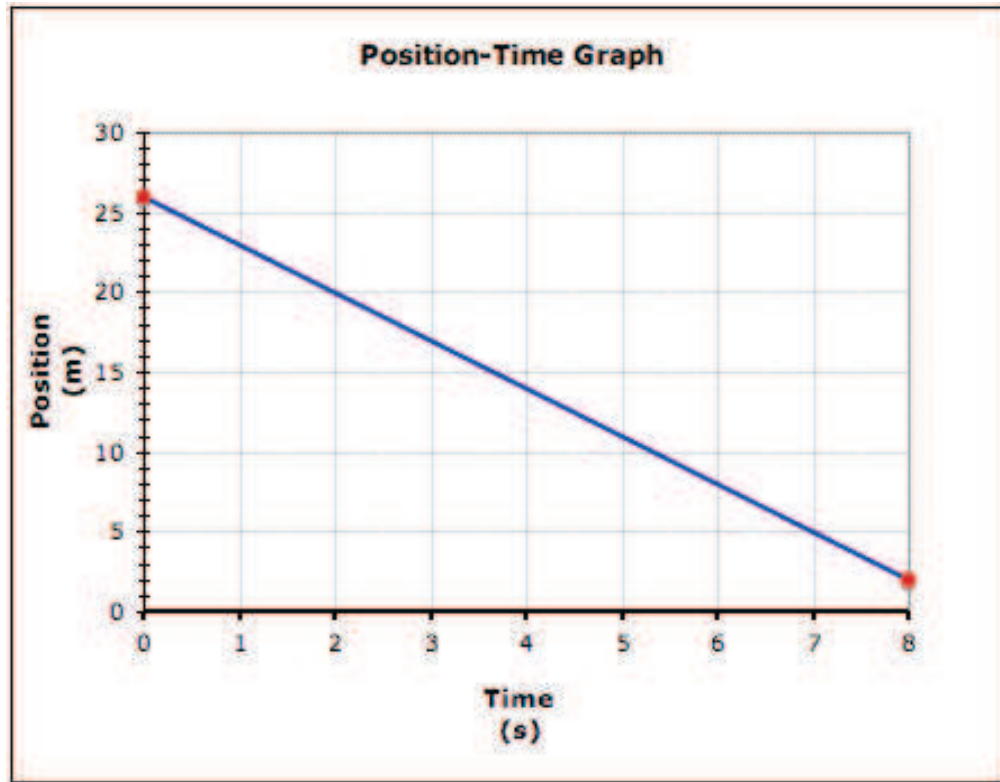
52. What would your friend's displacement be after 12 s?

- A. 7.5 m [E]
- B. 9 m [E]
- C. 9 m
- D. +16 m

53. What is your friend's average velocity?

- A. 0.75 m/s [E]
- B. 0.75 m/s<sup>2</sup> [E]
- C. +1.3 m/s
- D. +7.5 m/s





54. Using the graph above, determine the velocity of the moving object.

- A.  $-3.25 \text{ m/s}^2$
- B.  $-3 \text{ m/s}$
- C.  $+3 \text{ m/s}$
- D.  $+3.5 \text{ m/s}$

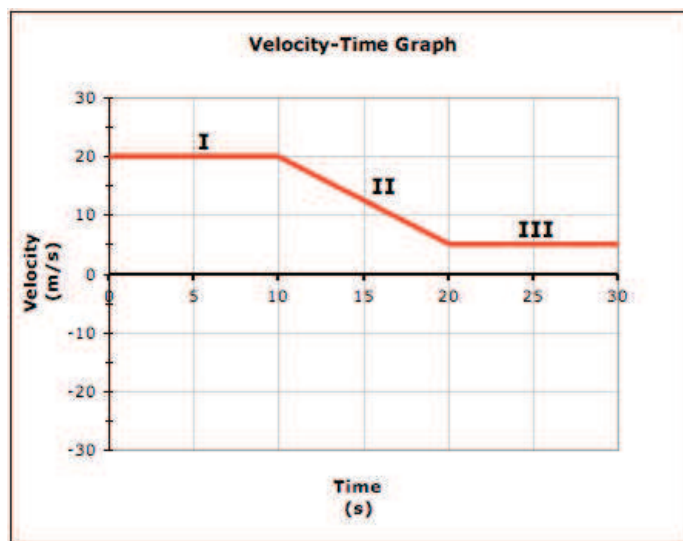
Let's suppose you dropped your binder with your labs in it and you noticed you did not title one particular lab. Upon close examination, you observed an interesting pattern and realized which lab it is.

Time (s)	Velocity (m/s)
0	0
1	-9.8
2	-19.6
3	-29.4
4	-39.2
5	-49.0

55. What would be the probable title for this lab?

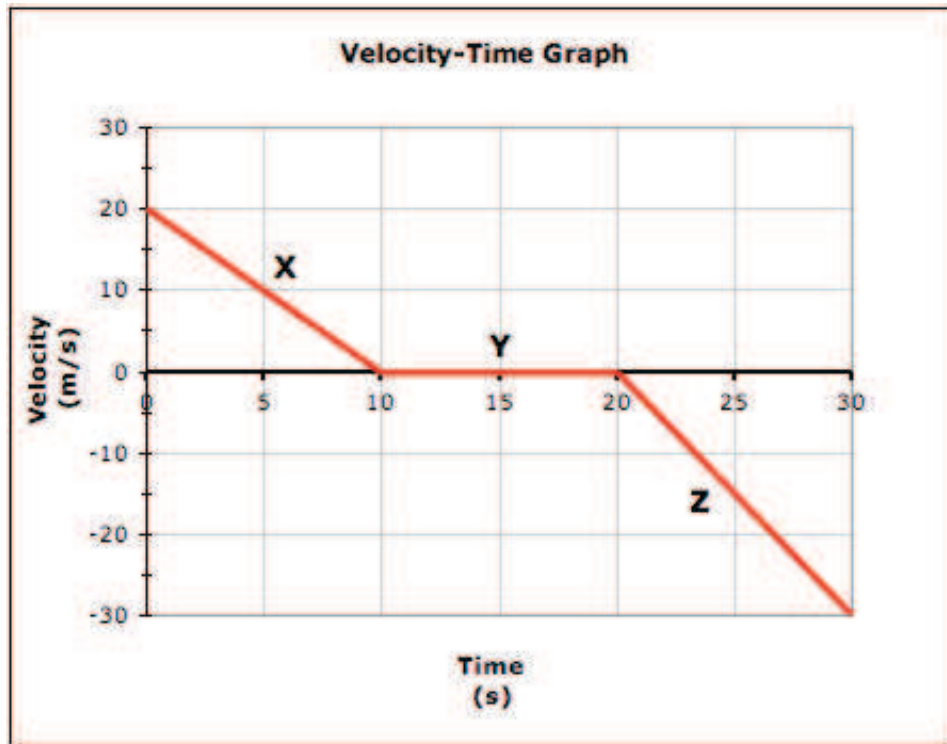
- A. Galileo's Free Fall Lab
- B. Parachute Egg Drop Lab
- C. Constant Velocity Cart Lab
- D. Slope and Position-Time Lab

56. Look carefully at the three labelled sections of the line on the graph. What section(s) demonstrate zero acceleration?



- A. I
- B. II
- C. III
- D. I and III

Use the graph to answer the question below.



57. Which of the following descriptions is correct for all 3 phases, X, Y, and Z?

	Section of graph		
	X	Y	Z
I.	negative acceleration	zero acceleration	negative acceleration
II.	negative acceleration	positive acceleration	negative acceleration
III.	negative acceleration	zero acceleration	positive acceleration
IV.	positive acceleration	zero acceleration	negative acceleration

- A. I
- B. II
- C. III
- D. IV

58. During the holidays, Joe decides to drive to the interior of British Columbia for some rest and relaxation. His car is travelling at 120 km/h and he suddenly brakes to avoid hitting a deer, coming to a complete stop in 6 s. What is his acceleration?
- A.  $-33.3 \text{ m/s}^2$
  - B.  $-20 \text{ m/s}^2$
  - C.  $-5.6 \text{ m/s}^2$
  - D.  $+5.6 \text{ m/s}^2$
59. During take-off, a Boeing 747 airplane accelerates forwards from rest at  $4 \text{ m/s}^2$ . If it requires 50 s to reach take-off velocity, what is its take-off velocity?
- A.  $-12.5 \text{ m/s}$
  - B.  $-200 \text{ m/s}$
  - C.  $+12.5 \text{ m/s}$
  - D.  $+200 \text{ m/s}$
60. If light travels in space at 300 000 km/s forward, how far will light travel in one day?
- A. 12 500 km
  - B. 7.2 million km
  - C. 1 080 000 000 km forward
  - D.  $2.59 \times 10^{10}$  km forward

61. Which of the following statements is correct:

I	The more kinetic energy a substance has, the more thermal energy it has
II	A cup of hot chocolate has less thermal energy than a large bathtub full of lukewarm water
III	As particle separation increases, the potential energy decreases
IV	Heat is the total energy of all the particles in a substance

- A. I and II
- B. I, II and IV
- C. I, II, III, and IV
- D. II, III and IV

62. The process by which organisms living at the bottom of a lake get the oxygen they need to survive is related to which method of heat transfer?

- A. gravity
- B. radiation
- C. convection
- D. conduction

63. After convection brings heat from the core of the earth to the base of the lithosphere, what process carries the heat through the lithosphere to the surface?

- A. volcanic eruptions
- B. radiation
- C. convection
- D. conduction

64. Which of the following will have the lowest albedo?

- A. glaciers in Antarctica
- B. forest in Stanley Park
- C. white sandy beaches of Cuba
- D. sand dunes in the Gobi desert

65. Which of the following does not directly affect atmospheric pressure?
- A. altitude
  - B. humidity
  - C. temperature
  - D. Earth's rotation
66. When you wake up tomorrow morning to your radio alarm clock, you might hear, "It is going to be a cool dry day today." What could be a possible explanation for this?
- A. There was high relative humidity.
  - B. Warm air pushed into an area of cold air.
  - C. There was a decrease in atmospheric pressure.
  - D. There was an increase in atmospheric pressure.
67. Which of the following factors has the least influence on prevailing winds?
- A. jet stream
  - B. geography
  - C. Coriolis effect
  - D. global wind systems



**2008 to be in top 10 warmest years say forecasters**

Thu Jan 3, 2008 7:24pm GMT (By Jeremy Lovell)

LONDON (Reuters) - 2008 will be slightly cooler than recent years globally but will still be among the top 10 warmest years on record since 1850 and should not be seen as a sign global warming was on the wane, British forecasters said.

They said the forecast took into account the annual Pacific Ocean La Niña weather phenomenon which was expected to be particularly strong this year and which would limit the warming trend.

It also took account of rising atmospheric concentrations of so-called greenhouse gases, solar variations and natural changes in the ocean currents.

La Niña and its opposite El Niño ocean-atmosphere phenomenon have strong influences on global temperatures. La Niña reduces the sea surface temperature by around 0.5 degrees Celsius while El Niño has the opposite effect.

"Phenomena such as El Niño and La Niña have a significant influence on global surface temperature and the current strong La Niña will act to limit temperatures in 2008," said Chris Folland from the Met Office Hadley Centre.

The World Meteorological Organisation said last month there were indications that the 10 years from 1998 to 2007 were the hottest decade on record.

The Met Office Hadley Centre said the top 11 warmest years have all occurred in the last 13.

*(Editing by Matthew Jones)*

*Adapted from <http://uk.reuters.com/articlePrint?articleId=UKL0314515220080103>*

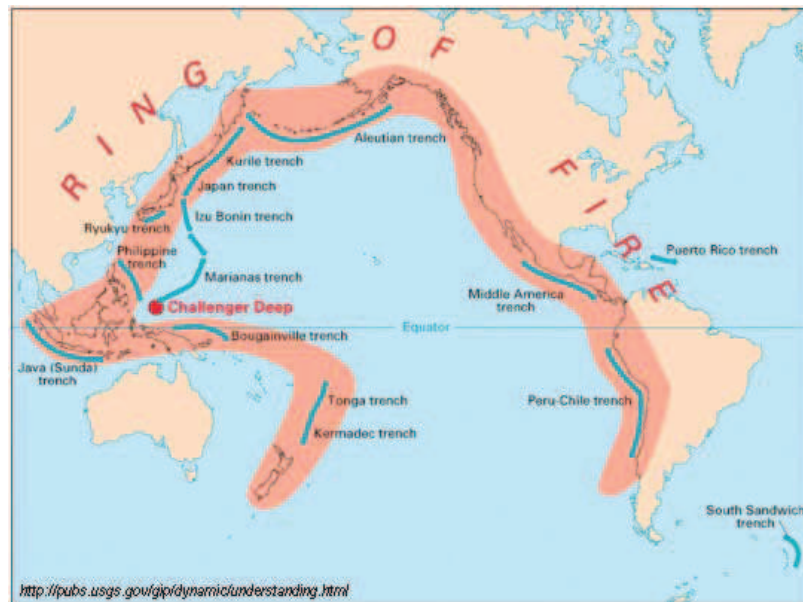
68. The article suggests that the 11 warmest years on record have all occurred in the last 13 years, and the recent cooling of global temperatures is only a temporary phenomenon. What is the cause of this temporary cooling?
- A. a La Niña event
  - B. an El Niño event
  - C. a decrease in greenhouse gases
  - D. natural changes in the ocean currents
- 
69. Which human-made greenhouse gas was banned in the Montreal Protocol for damaging the Earth's protective ozone layer?
- A. N<sub>2</sub>O
  - B. CO<sub>2</sub>
  - C. CFCs
  - D. methane

70. Which of the following statements are genuine concerns related to the melting of Arctic sea ice?

I	Sea ice regulates ocean water temperature (albedo)
II	Balance of sea water and fresh water altering ocean and weather currents
III	Arctic sea ice provides a habitat for many species, enhancing biodiversity
IV	Arctic tourism is on the rise bringing in tourists, development of hotels, infrastructure and industry which threatens to pollute the waterways

- A. I and II  
B. I, III, and IV  
C. I, II, and III  
D. II and III

Use this illustration, and refer to the data pages to answer the following question.



71. It is estimated that 90% of earthquakes take place along the Ring of Fire. Which of the following best describes the primary type of boundary found along the Ring of Fire?

A. oceanic hot spot  
 B. divergent ridge  
 C. convergent subduction zone  
 D. transform oceanic-continental fault

72. Which of the following statements about surface seismic waves, also known as L-waves, are correct?

I	These waves travel along the earth's surface
II	These waves are the second to arrive at distant locations
III	These waves are considered body waves
IV	These waves go through Earth's mantle
V	Their ground motion is a rolling action, like ripples on a pond

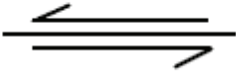


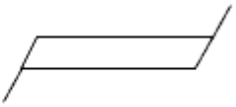
A. I & V  
 B. I, II, & V  
 C. II, III, & IV  
 D. III, IV, & V

73. Which of the following are associated with divergent plate boundaries?

I	volcanic belts
II	rift valleys
III	deep sea trenches
IV	volcanic island arcs
V	spreading ridges
VI	subduction zones

- A. I, III, IV, & VI
- B. I, III, IV, V, & VI
- C. II & V
- D. III, IV, & VI

74. Which of the following symbols do the African Rift Valley, the Explorer Ridge, and the East Pacific rise have in common?

I.	
II.	
III.	
IV.	

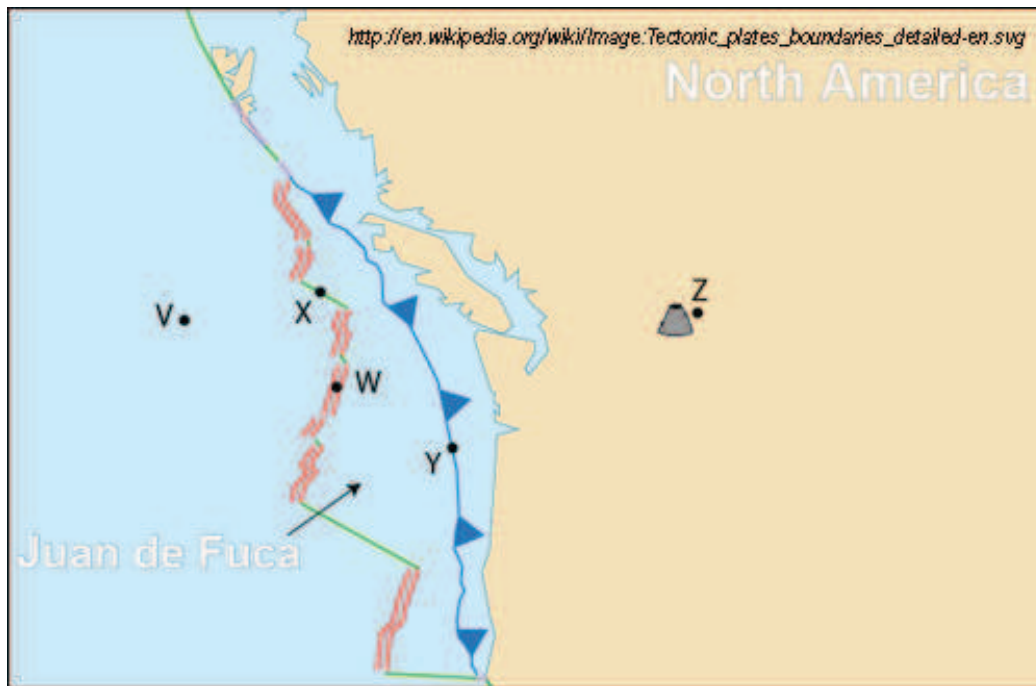
- A. I
- B. II and III
- C. III and IV
- D. IV

75. Which of the following is correct in all respects?

	Boundary/Structure	Feature	Example
I.	Hot Spot	Shield Volcano	Anahim belt
	Subduction zone	Cascade	Mt St Helens
	Divergent boundary	Volcanoes	Krafla volcano
II.	Subduction zone	Volcanic Island arc	Indonesia
	Divergent boundary	Continental	African Rift Valley
	Hot spot	Composite Volcano	Hawaiian Islands
III.	Convergent boundary	Continental-continental	Himalayas
	Hot spot	Shield Volcano	Hawaiian Islands
	Transform boundary	Spreading ridge	Iceland breaking up
IV.	Hot spot	Shield Volcano	Aleutian Islands
	Divergent boundary	Oceanic ridge	Gorda ridge
	Transform boundary	Oceanic-continental	San Andreas fault

- A. I
- B. II
- C. III
- D. IV

Use this map to answer the following question.

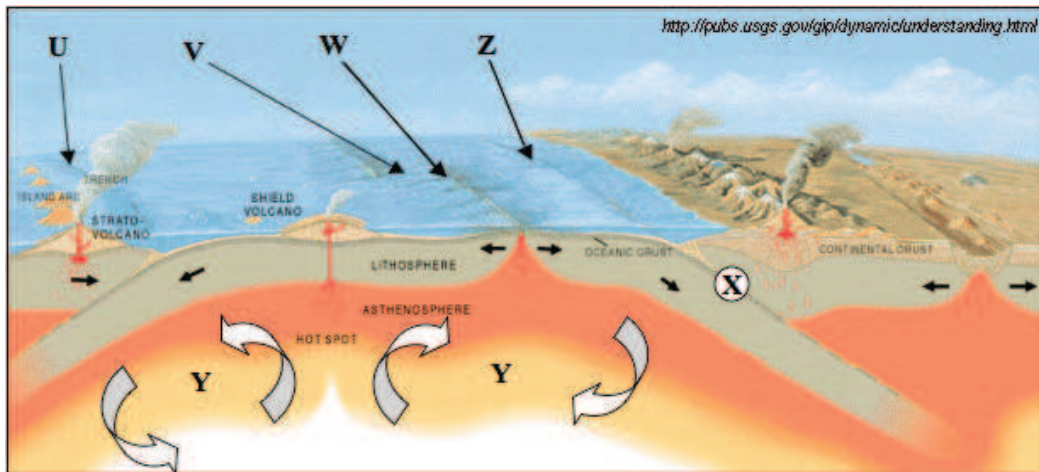


76. Which geological feature caused Z to form?

- A. V
- B. W
- C. X
- D. Y



Use this diagram to answer the following question.



77. The following table identifies possible causes for tectonic plate movement. Which of the four options correctly identifies the cause of motion at locations W, X, and Y?

	W	X	Y
I.	Hot spot	Slab pull	Ridge push
II.	Slab push	Ridge pull	Convection current
III.	Trench formation	Ridge push	Slab pull
IV.	Ridge push	Slab pull	Convection currents

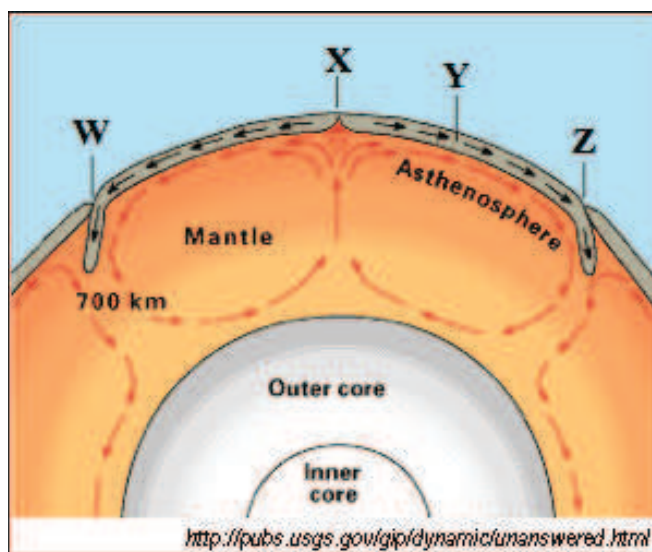
- A. I  
B. II  
C. III  
D. IV

78. Which of the following were not used as evidence for the continental drift theory?

I	jigsaw fit of continental shelves
II	paleoglaciation
III	paleomagnetism
IV	matching geologic structures in different locations in the world
V	matching fossils in various locations in the world
VI	seafloor spreading

- A. III & IV
- B. III & VI
- C. II and III
- D. I, II, IV, and V

**Use this diagram to answer the following question.**



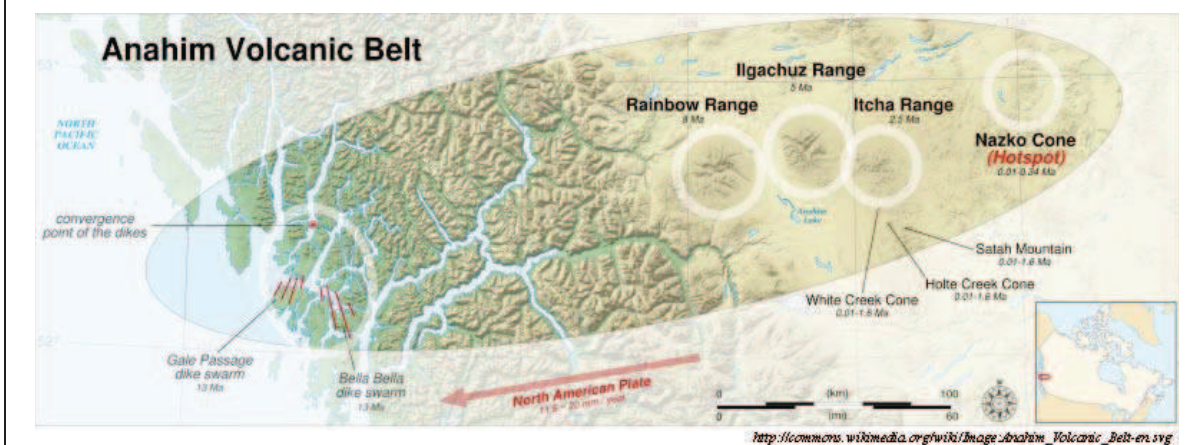
79. Which of the following would form at X?

- A. oceanic ridge
- B. oceanic trench
- C. subduction zone
- D. volcanic island arc

Over tens of millions of years, a hot spot under the western-moving North American Plate has formed a line of volcanoes called the Anahim Volcanic Belt, stretching from the coast to the Interior Plateau near Quesnel. Each of the volcanoes was once over the hot spot, but migration of the North American Plate has pulled the volcanoes away from the hot spot's magmatic source at a rate of 2 cm to 3.3 cm per year. As a result, the volcanoes are progressively older to the west.

Recent earthquakes at the Anahim hot spot have aroused much interest from volcanologists and seismologists since they began on October 9, 2007. More than 1,000 earthquakes have now been detected, and seven stations are monitoring the area for further activity.

*adapted from [http://en.wikipedia.org/wiki/Anahim\\_hotspot](http://en.wikipedia.org/wiki/Anahim_hotspot)*



80. What would be the order of the Anahim volcanic belt volcanoes from oldest to youngest?

- A. Rainbow Range, Ilgachuz Range, and Itcha Range
- B. Itcha Range, Ilgachuz Range, and Rainbow Range
- C. Rainbow Range, Ilgachuz Range, Itcha Range, and Nazko cone
- D. Nazko cone, Itcha Range, Ilgachuz Range, and Rainbow Range

# BC Science 10

# Practice Exam A KEY

Question	Answer	Curriculum			Textbook
		Organizer	Sub-Organizer	Cognitive Level	
001	B	B	1c	K	1.1, pg 9
002	C	B	1b	K	1.1, pg 17, 19
003	A	B	2a	UA	2.1, pg 60
004	C	B	1h	UA	1.1, pg 13
005	B	B	2c	UA	2.3, pg 96
006	A	B	1h	UA	1.2, pp 42-43
007	D	B	1g	HM	2.2, pp 84-86
008	B	B	1a	HM	1.1, pg 20
009	A	B	1g	K	2.2, pp 78-80
010	D	B	2a	UA	2.1, pg 62
011	A	B	2d	UA	2.3, pp 94-95
012	B	B	3b	UA	3.1, pp 115-116, 120
013	B	B	1g	K	2.2, pg 73
014	C	B	3a	K	3.1, pg 110
015	D	B	3c	UA	3.3, pp 138-139
016	A	B	3e	UA	3.2, pg 131
017	D	B	3a	K	3.1, pg 114
018	A	B	1b	K	1.1, pp 20-28
019	D	B	2b	K	2.3, pp 97-98
020	C	B	3d	UA	3.2, pp 133-134
021	B	C	1c	UA	4.1, pg 173
022	A	C	1b	K	4.1, pg 177
023	C	C	1c	UA	4.1, pg 174
024	B	C	1d	K	4.1, pg 175
025	C	C	2f	K	4.2, pp 191-192
026	B	C	2g	K	4.2, pg 194
027	D	C	4d	HM	5.2, pg 236
028	D	C	2a	UA	5.1, pg 224
029	A	C	2d	K	5.1, pg 226
030	B	C	2c	UA	5.1, pg 229
031	C	C	2e	UA	5.2, pg 237
032	B	C	2e	HM	5.2, pg 237
033	A	C	2e	K	5.2, pg 238
034	D	C	3c	K	5.3, pp 244-246
035	B	C	4d	HM	6.1, pp 258-264
036	C	C	4c	UA	6.1, pp 266-267
037	C	C	4d	HM	6.1, pp 209, 264, 267
038	D	C	4a	UA	4.3, pg 205
039	D	C	4e	UA	6.2, pp 274-276
040	B	C	4c	HM	6.2, pg 266

Question	Answer	Curriculum			Textbook
		Organizer	Sub-Organizer	Cognitive Level	
041	B	C	5a	UA	7.1, pp 289-290
042	C	C	5b	K	7.1, pg 298
043	A	C	5c	UA	7.1, pg 296
044	B	C	5d	UA	7.2, pp 304-305
045	C	C	5e	K	7.3, pp 320-321
046	B	C	6a	UA	8.1, pp 346-348
047	A	C	6c	UA	8.2, pp 364-366
048	A	C	6b	UA	8.1, pg 353
049	B	C	6b	UA	8.1, pg 348
050	C	C	7c	UA	9.2, pp 396-397
051	D	C	6a	UA	8.1, pg 348
052	B	C	6b	UA	8.1, pp 350-353
053	A	C	6b	UA	8.1, pg 365
054	B	C	6c	UA	8.2, pp 364-366
055	A	C	7b	HM	9.2, pg 400
056	D	C	7b	UA	9.2, pg 382
057	A	C	7b	UA	9.2, pg 395
058	C	C	7c	HM	9.2, pg 367, 396
059	D	C	7c	UA	9.2, pg 397
060	D	C	6c	UA	8.2, pg 369
061	A	D	1a	UA	10.1, pp 426-427
062	C	D	1b	UA	10.1, pg 429
063	D	D	1b	UA	10.1, pg 428
064	B	D	1c	K	10.2, pg 442
065	D	D	2a	K	10.2, pp 445-446
066	D	D	2b	UA	10.2, pp 445-446
067	A	D	2c	UA	10.2, pp 448-450
068	A	D	3a	HM	11.1, pp 473, 478-479
069	C	D	3b	K	11.2, pp 484-486
070	C	D	3c	UA	11.2, pg 500
071	C	D	4a	UA	12.2, pp 522, 525-526
072	A	D	4b	UA	12.2, pg 529
073	C	D	4c	UA	12.2, pg 523
074	D	D	4d	K	12.2, pp 523-526
075	A	D	4c	HM	12.2, pp 522-526, 532-534
076	D	D	4e	UA	12.2, pg 532
077	D	D	4g	UA	12.2, pg 522
078	B	D	5a	UA	12.1, pg 507
079	A	D	4e	UA	12.1, pg 512
080	C	D	5b	UA	12.2, pg 533